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Philippe Cosquer

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BRIGGS AND MORGAN P.A.
2200 IDS CENTER
80 SOUTH 8TH ST
MINNEAPOLIS, MN 55402

EXAMINER

NGUYEN, HUONG Q

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Art Unit: 3736

DETAILED ACTION

1. This Office Action is responsive to the amendment filed 10/27/2008. Claim 1 is amended. Claims 24-26 are cancelled overcoming the previous drawing objections. **Claims 1-23, 27, and 29-34** remain pending and under prosecution.

Information Disclosure Statement

2. It is noted that Applicant has not submitted an Information Disclosure Statement (IDS). Applicant is reminded of the duty to disclose all known prior art resulting from such art searches

Claim Objections

3. **Claims 1-23 and 27** are objected to because of the following informalities: Claim 1 includes step "d" of the claim underlined as an indication of a new amendment to the claim. However, upon comparison with the previous reversion of the claim dated 9/26/2005, it is noted that step "d" is not a new amendment and thus should not have been underlined indicating such. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. **Claims 1-23 and 27** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which

Art Unit: 3736

was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, it is unclear if Applicant's disclosure provides support for recitation of the flexible membrane fixed to a shell which is not designed to come in contact with the skin of the individual as recited in Claim 1. As best understood by the Examiner, it appears that the bottom half 34 of the casing (shell) to which flexible membrane 22 is fixed is designed to come into contact with the skin if the individual as best seen in Figure 2A and 4. As such, it is believed that said amendment to Claim 1 constitutes new matter and should be cancelled in the reply to this Office Action.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 1-18 and 22-23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Gorsuch et al (US Pat No. 5218972) in view of Wallace (US Pat No. 4658829).

8. In regards to **Claim 1**, Gorsuch et al disclose a device for measuring at least one item of physiological information through the skin of an individual, comprising:

Art Unit: 3736

a) a flexible membrane 38 designed to come into contact with the skin of the individual and fixed to a shell 22 which is not designed to come in contact with the skin of the individual, best seen in Figure 2;

b) at least one sensor 26;

c) a deformable space 24 formed by the flexible membrane and the sensor;

d) a flexible substance 36 filling the space for transmitting to the at least one sensor at least one physical force to be undergone by the membrane, best seen in Figure 2.

9. However, Gorsuch et al do not explicitly disclose said sensor mounted on a support card. Wallace teaches that an analogous pressure sensor is mounted on support card 42 along with other electronic components to effectively consolidate said electronic components for proper communication and functioning, best seen in Figure 3 (Col.6: 21-22). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Gorsuch et al such that said sensor is mounted on a support card as taught by Wallace to enable said sensor as well as other electronic components to be effectively consolidated for further processing of the sensor signals as already disclosed in Gorsuch et al (Col.4: 51-56).

10. In regards to **Claim 2**, the membrane 38 comprises means of fixing to the support, best seen in Figure 2.

11. In regards to **Claim 3**, said membrane 38 defines at least one housing 22 designed to receive the said support, best seen in Figure 2.

Art Unit: 3736

12. In regards to **Claim 4**, said membrane 38 comprises means 39 for fixing to a shell element 22 of the said device, best seen in Figure 2.

13. In regards to **Claim 5**, said membrane 38 defines at least one housing 12 designed to receive the said shell element 22, best seen in Figure 2.

14. In regards to **Claim 6**, the fixing means acts by clipping.

15. In regards to **Claim 7**, the membrane 38 has at least two areas with different rigidities due to stretching of the membrane during assembly as known to one of ordinary skill in the art.

16. In regards to **Claim 8**, the membrane 38 has a main contact area, designed to come in contact with the skin of the individual, and a peripheral area, extending over the contour of the main contact area, best seen in Figure 1-2.

17. In regards to **Claim 9**, each of the areas fulfills a distinct function, belonging to the group comprising the measurement of forces, the transmission of forces and the rigidity of the shape of the membrane (abst).

18. In regards to **Claim 10**, the thickness of the peripheral area is less than the thickness of the main contact area due to stretching of the membrane during assembly as known to one of ordinary skill in the art.

19. In regards to **Claim 11**, the membrane 38 is capable of being obtained by overmoulding at least two materials with different rigidities, wherein it is noted that the process of making an element in an apparatus claim does not carry much patentable weight.

20. In regards to **Claim 12**, the membrane 38 is produced from at least one hypoallergenic material (Col.3: 49-53).

Art Unit: 3736

21. In regards to **Claim 13**, the membrane 38 and the substance 36 has an elastic character (Col.3: 44-53).
22. In regards to **Claim 14**, the substance 36 is a substantially non-compressible material (Col.3: 44).
23. In regards to **Claim 15**, the substance 36 is a dielectric material.
24. In regards to **Claim 16**, the substance 36 is a silicone gel (Col.3: 46).
25. In regards to **Claim 17**, the sensor 26 is at least one transducer for measuring at least one dynamic force, representing an arterial pressure wave or a relative movement (abst).
26. In regards to **Claim 18**, the sensor 26 is at least one transducer for measuring at least one static force (abst).
27. In regards to **Claim 22**, a shell is formed from a complementary a bottom shell element 12 carrying the said membrane and a top shell element 16, best seen in Figure 1-2.
28. In regards to **Claim 23**, the shell elements 12, 16 are connected together by screwing, clipping or adhesive bonding, also providing a seal for the substance 36 (Col.4: 3-4).
29. **Claims 19-21 and 27** are rejected under 35 U.S.C. 103(a) as being unpatentable over Gorsuch et al in view of Wallce, further in view of Stivoric et al (US Pat No. 7020508).
30. In regards to **Claim 19**, Gorsuch et al in combination with Wallace disclose the invention above but do not disclose the sensor measures skin temperature. Stivoric et al disclose an analogous physiological information measuring device comprising multiple types of sensors including a skin temperature sensor (Col.6: 45-48). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a skin temperature

Art Unit: 3736

sensor with the invention of Gorsuch et al as modified by Wallace as taught by Stivoric et al to effectively acquire other pertinent information such as the temperature of the user's skin.

31. In regards to **Claim 20**, Gorsuch et al in combination with Wallace disclose the invention above but do not disclose the sensor is comprised from a group of a piezocapacitive sensor, a piezoresistive sensor or a contact switching at a predetermined pressure. Stivoric et al disclose an analogous physiological information measuring device comprising a force sensor in the form of a piezoresistive sensor (Col.39: 33-39). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the sensor of Gorsuch et al as modified by Wallace be a piezoresistive sensor as taught by Stivoric et al as an effective force sensor to measure such.

32. In regard to **Claims 21 and 27**, Gorsuch et al in combination with Wallace disclose the invention above but do not disclose the support card carrying electronic components for effecting the amplification, treatment and processing of electrical signals and a decision relating to a state of the individual and means for supplying electrical energy and a communication interface. Stivoric et al disclose an analogous physiological information measuring device comprising a support card that is a printed circuit or printed circuit board (PCB) 445 carrying electronic components for effecting the amplification, treatment and processing of electrical signals and a decision relating to a state of the individual, best seen in Figure 18, 20, and 29 (Col.23-28). Stivoric et al also disclose means for supplying electrical energy, i.e. battery (Col.23: 43-47), and a communication interface, best seen in Figure 21. Stivoric et al also teach using the sensor data to determine various types of information such as listed in Table 1 (Col.8).

Art Unit: 3736

33. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Gorsuch et al as modified by Wallace to have the support card that is a printed circuit carrying electronic components for effecting the amplification, treatment and processing of electrical signals and a decision relating to a state of the individual and means for supplying electrical energy and a communication interface, as taught by Stivoric et al, to enhance the device by enabling subsequent processing of the collected data resulting from transmission of the physical force by the substance to determine at least one item of blood pressure information; at least one item of information representing a pulse; at least one item of information representing an arterial tension; at least one item of information representing respiration; at least one item of information representing an activity of the said individual; at least one item of information representing a fall; at least one item of information representing a wave form; at least one item of information representing the skin temperature of the wearing area; at least one item of information as to whether the device is worn or not worn; and at least one item of information representing a change of one of the above items of information.

34. **Claims 29-34** are rejected under 35 U.S.C. 103(a) as being unpatentable over Gorsuch et al in view of Wallace, further in view of Scholz et al (US Pat No. 6598482).

35. In regards to **Claim 29**, Gorsuch et al and Wallace disclose a device for measuring at least one item of physiological information including necessary electronic components 26 on a support 42, a membrane 38 and the support including sensor 26 defining a deformable space 24,

Art Unit: 3736

and a substance 36 filling the space, best seen in Figure 1-2 and as elaborated in Claim 1 above.

However, Gorsuch et al do not disclose a method of manufacturing said device. Scholz et al disclose a method of manufacturing an analogous physiological information sensing device comprising at least a membrane (diaphragm plate) defining a space filled with a substance, best seen in Figure, wherein after the components have been assembled together, the substance is finally injected in the space (p.3 Claim 13 "d"). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Gorsuch et al as modified by Wallace such that the method of manufacturing the device comprises assembling all the components by mounting the necessary electronic components on the support, connecting together a membrane and the support to define the deformable space, and then finally injecting the substance in said space, as taught by Scholz et al, as an effective method of manufacturing such devices.

36. In regards to **Claim 30**, Scholz discloses the substance is injected into the space in a liquid form (Claim 13 p.3).

37. In regards to **Claim 31**, Gorsuch et al disclose the support 22 is inserted in at least one housing 12 defined in the membrane 38, best seen in Figure 2.

38. In regards to **Claim 32**, Gorsuch et al disclose the membrane 38 is fixed to a bottom shell element 12, by means of at least one housing 16 provided for this purpose on the membrane, best seen in Figure 2.

Art Unit: 3736

39. In regards to **Claim 33**, Gorsuch et al disclose assembling a shell formed from a bottom shell element 12 and a top shell element 16, best seen in Figure 2.

40. In regards to **Claim 34**, Gorsuch et al disclose the shell elements 12, 16 are connected together by screwing, clipping or adhesive bonding (Col.4: 3-4).

Response to Arguments

41. Applicant's arguments with respect to claims 1-23, 27, and 29-34 have been considered but are moot in view of the new ground(s) of rejection.

42. Applicant contends that circular housing 12 of Gorsuch et al comes into contact with the skin. However, as noted in the rejection of Claim 1, the shell is defined by element 22 and not housing 12. Also note the §112 rejections above.

43. In regards to Claim 15, it is noted that substance 36 which is a gel cured silicone is known to one of ordinary skill in the art to be a dielectric, as evidence by for example <http://www.ellsworth.com/display/productdetail.html?productid=263&Tab=V>. Furthermore, Applicant discloses use of the same dielectric substance in ¶0033 and 0104 of the specification.

Conclusion

44. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 3736

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HELEN NGUYEN whose telephone number is (571)272-8340. The examiner can normally be reached on Monday - Friday, 9 am - 6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Max Hindenburg can be reached on 571-272-4726. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/550,665

Page 12

Art Unit: 3736

/H. N./

Examiner, Art Unit 3736

/Max Hindenburg/

Supervisory Patent Examiner, Art Unit 3736